WHAT IS CLAIMED IS:

1. A method for controlling a stand-by braking torque applied to an automotive vehicle under a condition of approaching or following an obstacle preceding the vehicle, the method comprising:

determining a brake signal for brake pressure to apply a brake torque, as a stand-by braking torque;

establishing at least one brake torque threshold;

monitoring the brake torque;

comparing the monitored brake torque with the established brake torque threshold; and

modifying the brake signal in response to the comparing the monitored brake torque with the established brake torque threshold.

2. A method as claimed in claim 1, wherein a braking system is employed, which uses hydraulic brake fluid as working medium, wherein the step of monitoring the brake torque includes:

detecting pressure of the hydraulic brake fluid at a first location within the braking system to generate a first output signal indicative of the detected pressure at the first location;

detecting pressure of the hydraulic brake fluid at a second location within the braking system to generate a second output signal indicative of the detected pressure at the second location; and

processing the first and second output signals to provide at least one variable expressing one of characteristics of the brake torque.

3. A system for controlling a stand-by braking torque

applied to an automotive vehicle under a condition of approaching or following an obstacle preceding the vehicle, the system comprising:

an obstacle detection system for detecting a distance between the vehicle and the obstacle preceding the vehicle;

a braking system for application, as a stand-by braking torque, brake torque to the vehicle in response to a brake signal; and

a controller for determining whether or not an operator braking action to reduce the speed of the vehicle is imminent under a condition of approaching or following an obstacle preceding the vehicle based on the detected distance by the detection system and a vehicle speed of the vehicle, determining an initial value of brake torque, determining the brake signal for the determined initial value of brake torque, applying the determined brake signal to the braking system upon determination that the operator braking action is imminent, monitoring the brake torque applied to the vehicle, and modifying the brake signal based on the monitored brake torque after determination that the operator braking action is imminent.

4. A system as claimed in claim 3, wherein the controller determines a variable expressing instantaneous magnitude of the brake torque, compares the determined variable with a predetermined brake torque threshold, and effects operations to modify the brake signal when the determined variable satisfies a predetermined relationship with the predetermined brake torque threshold.

5. A system as claimed in claim 4, wherein the controller calculates a period of time during which the determined variable stays greater than or equal to the predetermined brake torque

threshold, and reduces the brake signal to lower the brake torque when the calculated period of time is equal to or greater than a predetermined period of time.

6. A system as claimed in claim 4, wherein the controller calculates a period of time during which the determined variable stays greater than or equal to the predetermined brake torque threshold, and adjusts the brake signal to reduce the brake torque in response to the calculated period of time.

7. A system as claimed in claim 3, wherein the controller determines a variable expressing instantaneous magnitude of the brake torque, compares the determined variable with a predetermined brake torque threshold, and effects operations to modify the brake signal when the determined variable satisfies a predetermined relationship with the predetermined brake torque threshold.

8. A system as claimed in claim 7, wherein the controller calculates period of time during which the determined variable stays less than or equal to the predetermined brake torque threshold, and increases the brake signal to increase the brake torque when the calculated period of time is equal to or greater than a predetermined period of time.

9. A system as claimed in claim 7, wherein the controller calculates period of time during which the determined variable stays less than or equal to the predetermined brake torque threshold, and adjusts the brake signal to increase the brake torque in response to the calculated period of time.

10. A system as claimed in claim 3, wherein the controller determines a variable expressing time rate of change of

magnitude of the brake torque, compares the determined variable with a predetermined brake torque threshold, and reduces the brake signal to reduce the brake torque when the determined variable is greater than or equal to the predetermined brake torque threshold.

11. A system as claimed in claim 3, wherein the controller determines a variable expressing time rate of change of magnitude of the brake torque, compares the determined variable with a predetermined brake torque threshold, and increases the brake signal to increase the brake torque when the determined variable is less than or equal to the predetermined brake torque threshold.

12. A system as claimed in claim 3,

wherein the controller determines a first variable expressing instantaneous magnitude of the brake torque, compares the determined first variable with a predetermined first brake torque threshold, and calculates a first period of time during which the determined first variable stays greater than or equal to the first predetermined brake torque threshold;

wherein the controller determines a second variable expressing instantaneous magnitude of the brake torque, compares the determined second variable with a predetermined second brake torque threshold, and calculates a second period of time during which the determined second variable stays less than or equal to the predetermined second brake torque threshold; and

wherein the controller subtracts the calculated second period of time from the calculated first period of time to give a difference, and adjusts the brake signal in response to the difference.

13. A system as claimed in claim 6, wherein the controller adjusts the brake signal such that the longer the calculated period of time, the less the brake torque is.

14. A system as claimed in claim 9, wherein the controller adjusts the brake signal such that the longer the calculated period of time, the greater the brake torque is.

15. A system as claimed in claim 12, wherein the controller adjusts the brake signal such that, in the event the difference is positive, the greater the difference, the less the brake torque is, while, in the event the difference is negative, the less the difference, the greater the brake torque is.

16. A system as claimed in claim 13, wherein the braking system employs hydraulic brake fluid as working medium, and a first pressure sensor detects first pressure of the hydraulic brake fluid of the braking system to generate a first output signal indicative of the detected first pressure, and a second pressure sensor detects second pressure of the hydraulic brake fluid of the braking system to generate a second output signal.

17. A system as claimed in claim 16, wherein the controller determines a maximum and a minimum of the first and second output signals and uses one of the determined maximum and minimum as a variable expressing instantaneous magnitude of the brake torque.

18. A method for controlling a stand-by braking torque applied to an automotive vehicle under a condition of approaching or following an obstacle preceding the vehicle, the automotive vehicle having a braking system for application of brake torque, as a stand-by braking torque, to the vehicle in response to a

brake signal, the method comprising:

detecting a distance between the vehicle and the obstacle preceding the vehicle;

determining whether or not an operator braking action to reduce the speed of the vehicle is imminent under a condition of approaching or following an obstacle preceding the vehicle based on the detected distance by the detection system and a vehicle speed of the vehicle;

determining an initial value of brake torque;

determining the brake signal for the determined initial value of brake torque;

applying the determined brake signal to the braking system upon determination that the operator braking action is imminent;

monitoring the brake torque applied to the vehicle; and

modifying the brake signal based on the monitored brake torque after determination that the operator braking action is imminent.

19. A system for controlling a stand-by braking torque applied to an automotive vehicle under a condition of approaching or following an obstacle preceding the vehicle, comprising:

means for applying brake torque, as a stand-by braking torque, to the vehicle in response to a brake signal;

means for detecting a distance between the vehicle and the obstacle preceding the vehicle;

controller means for determining whether or not an operator braking action to reduce the speed of the vehicle is imminent under a condition of approaching or following an obstacle preceding the vehicle based on the detected distance by the detection system and a vehicle speed of the vehicle, determining an initial value of brake torque, determining the brake signal for the determined initial value of brake torque,

applying the determined brake signal to the braking system upon determination that the operator braking action is imminent, monitoring the brake torque applied to the vehicle, and modifying the brake signal based on the monitored brake torque after determination that the operator braking action is imminent.

20. An automotive vehicle comprising:

a detection system for detecting a distance between the vehicle and the obstacle preceding the vehicle;

a braking system for application of brake torque, as a stand-by braking torque, to the vehicle in response to a brake signal; and

a controller for determining whether or not an operator braking action to reduce the speed of the vehicle is imminent under a condition of approaching or following an obstacle preceding the vehicle based on the detected distance by the detection system and a vehicle speed of the vehicle, determining an initial value of brake torque, determining the brake signal for the determined initial value of brake torque, applying the determined brake signal to the braking system upon determination that the operator braking action is imminent, monitoring the brake torque applied to the vehicle, and modifying the brake signal based on the monitored brake torque after determination that the operator braking action is imminent.